

Please amend the paragraph bridging pages 7 and 8 as follows:

The present invention provides a continuous process for producing controlled release, discrete, solid particles which contain an encapsulated and/or embedded component. The particles comprise a matrix material in which the active component is encapsulated or embedded. The matrix material is plasticized upon heating to form a melt. The active component is admixed with the melt without substantially deleteriously affecting or decomposing the encapsulant or the matrix material. The active component is admixed with the plasticized matrix material at low temperatures and under low shear mixing conditions to thereby avoid substantial destruction of or volatilization of active components. Additionally, high water contents may be employed so as to substantially reduce viscosity and facilitate substantial gelatinization of the starch without substantially destroying the starch molecules. Subsequent removal of at least part of the water prior to adding the encapsulant avoids excessive drying or evaporation of the plasticizing liquid which may adversely affect the encapsulant content. The moisture reduction within the extruder also provides for the attainment of a formable composition capable of being formed into discrete, substantially uniform pieces. Extrusion of the matrix and active component blend may be performed without substantial expansion of the product thereby providing a high density product which is less susceptible to attack by aqueous or oxygen-containing mediums thereby providing a prolonged release time. The process of

the present invention may be used to encapsulate heat sensitive components or readily oxidizable components, for example, pharmaceutically or biologically or nutritionally active components, without substantially destroying their activity. The products of the present invention may be edible for direct consumption or for incorporation into food products. In other embodiments of the invention, products, such as chemical or agricultural products such as pesticides, herbicides, fungicides, insecticides, rodenticides, or other products like detergents or flavorants, fragrances, and the like may be advantageously embedded or encapsulated to control or delay their release from their surrounding matrix.

On page 37 please amend the last full paragraph as follows:

The last 2 to 3 l/d screw length may be used to generate sufficient pressure to extrude the material through the die openings. The die used comprised 20 openings, arranged in two circles of ten bores, each having a cylindrical bore of 2 mm over a length of 4 mm and a subsequent narrow opening of 1 mm over a land length of 2 mm. The larger opening of the first part of the dies is critical to prevent substantial energy dissipation within the die through overshearing that would result in an increase of the product temperature and thus cause a thermal destruction of the encapsulant. Additionally, too narrow die channels cause higher pressures before the die and may

result in overheating of the product in the last barrel despite the cooling. The product temperature of the matrix at the encapsulant feeding point was about 25°C. The product temperature at the exit die was 52°C. The pressure at the die was 80 bar. The mean residence time of the encapsulant from the feed location to the die exit was about 35 seconds. On a calculated basis, the maximum flow rate of extrudate per die area is 0.361 kg/hr per mm², based upon the total amount of components added to the extrudate.

On page 38, please amend the second full paragraph as follows:

In this example, the effect of addition of the encapsulant prior to and after heat treatment was evaluated. The extruder used was the same as used in Example 1 and screw rpm was 150. A blend of 99.7% by weight starch with 0.3% GMS was fed at 4.0 kg/hr into barrel #1. Vegetable oil was fed at a rate of 0.39 kg/h into barrel #1. Ascorbic acid was fed at a rate of 1.15 kg/h into barrel 1 (Comparative Example 1) and was exposed to the following barrel temperature profile: Barrel 1 (15°C), Barrel 2 (15°C), Barrel 3 (120°C), Barrel 4 (140°C), Barrel 5 (140°C), Barrel 6 (15°C), Barrel 7 (15°C), Barrel 8 (15°C), Barrel 9 (15°C). On a calculated basis, the maximum flow rate of extrudate per die area is 0.352 kg/hr per mm², based upon the total amount of components added to the extruder. Analysis of ascorbic acid after extrusion resulted in a 72.3% loss.

On page 39 please amend the first full paragraph as follows:

In this example, a heat-sensitive fat soluble component was encapsulated. The extruder used was the same as used in Example 1 and the screw rpm was 150. A blend of 96.7% by weight starch, 3% by weight LDPE and 0.3% by weight GMS was fed at 4.0 kg/hr into barrel #1. Vegetable oil was fed at a rate of 0.16 kg/h into barrel #1. Following barrel temperature profile was used: Barrel 1 (15°C), Barrel 2 (15°C), Barrel 3 (120°C), Barrel 4 (140°C), Barrel 5 (140°C), Barrel 6 (15°C), Barrel 7 (15°C), Barrel 8 (15°C), Barrel 9 (15°C). The encapsulant salicylic acid may be fed at a rate of 1.15 kg/h into barrel 7 at a temperature of 20°C. The encapsulant was mixed into the matrix and extruded into ropes that were cut at the die into distinct spherical pellets having a diameter of about 1 mm. On a calculated basis the maximum flow rate of extrudate per die area is 0.338 kg/hr per mm², based upon the total amount of components added to the extruder. After extrusion, the extruded pellets were dried at 30°C for about 12 hours to a final moisture content of approximately 8% by weight. The dried pellets were stable in water for 16 hours and the salicylic acid may be sufficiently encapsulated within the matrix to allow controlled release under appropriate conditions.